

1969

BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
 COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
 19A, GURUSADAY ROAD, CALCUTTA - 19

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A. INTRODUCTION

1969, the year of the 10th anniversary of the Museum, was specially marked by its multifarious activities. Besides improvement in the exhibits displayed in the existing galleries (Nuclear Physics, Motive Power, Popular Science, Mining, Copper, Petroleum, Iron & Steel, Electricity, Television & Electronics, Communication), the museum organised various educational activities in and outside the museum to popularise science education among the students and common people of the country. They are : mobile science exhibitions for rural and suburban areas; regional science museums preferably in district towns for students and common people of the area; science demonstration lectures for school students; creative abilities centres to develop scientific aptitudes amongst the students; students science seminars; science fairs; filmshows on scientific and technical subjects; teachers' training programme etc.

During the year, the museum recorded a visitors' attendance of 2,12,880. Besides this 3,65,000 people, mostly students, attended mobile science exhibitions, regional science museums, science demonstration lectures, science fairs, filmshows etc. arranged by the museum in various places of West Bengal and Bihar within a radius of 533 km from Calcutta. 494 organised school groups covering 18,539 students and scholars from different schools, colleges and universities of the country undertook study tour to this museum as usual. 452 film shows on scientific and technical subjects were held in the museum auditorium and 170 film shows were held in the rural areas. Co-operation received from the people and various educational institutions in this respect is very encouraging.

During the year under report two mobile science exhibition units on the subjects 'Transformation of Energy' and 'Light and Sight' crossed West Bengal and covered wide areas of Bihar. In 1969, the museum held mobile science exhibitions in 160 places in the districts of Hooghly, Howrah, Burdwan, Nadia, Bankura, Purulia, Murshidabad, Birbhum, Midnapore, 24-Parganas in West Bengal and Singhbhum, Ranchi, Bhagalpur, Santhal Parganas, Monghyr, Patna, ^{and} Hazaribagh in Bihar.

Dhanbad,

The 10th anniversary of the BITM was celebrated during May 2 to 15, 1969 by drawing an elaborate programme which included, among others, fourteen-day students' science fair, 10 popular lectures on different branches of science by eminent scientists, special exhibition on 'Moon', filmshows, television, tape-recording etc.

Following the success of the Regional Science Museums in Purulia, Bankura and Midnapore, a new Regional Science Museum was opened in Raiganj Coronation High School, Raiganj, West Dinajpur on January 12, 1969. This small Regional Science Museum has been catering to the needs of the people and students of West Dinajpur and Maldah.

Regional Science Museum, Purulia has been completely renovated and set up on permanent basis with the addition of many interesting exhibits on Kinematics, space science, electronics etc. Purulia, comparatively a backward district of West Bengal, has been specifically selected for Regional Science Museum on permanent basis in view of the growing interest of the people of the area in the activities of the museum.

A science fair from May 2 to 15, 1969 was organised to develop scientific aptitude among school students and to encourage them to prepare models and exhibits on scientific subjects. More than 400 exhibits on science, engineering and technology made by 500 schools students were displayed in the

fair. Students from different parts of West Bengal and Bihar participated in the fair.

BITM also organised another week-long science fair at Krishnagar, Headquarter of Nadia district, by drawing a programme which included photographic exhibition on 'Land on Moon', filmshows on space science, mobile science exhibitions, popular lecture etc. About a lakh people visited the fair from December 25 to 31, 1969.

Short term training facilities were arranged in six district towns for science teachers of 36 selected High and Higher Secondary schools. In 1969, 55 teachers were trained in 6 such programmes for running Creative Abilities Centre in their schools and making exhibits for Science Demonstration Lectures based on school curricular.

Science Demonstration Lecture programmes based on school curricula were arranged regularly in and outside museum.

Birla Industrial & Technological Museum, participated in the Model Engineers' Exhibition held at the Academy of Fine Arts, Calcutta, from February 19 to 23, 1969 and received awards as follows :-

- a) A diorama showing life and transport used in Arctic Region - (size : length 5'-0", breadth 2'-6" and height 3'-6") was adjudged the best in the General Section. BITM has been awarded a trophy.
- b) A model of Stephenson's Locomotion Locomotive of the year 1825 (size : length 2'-7", breadth 5½" and height 1'-0") has been awarded a special certificate of merit in the Engineering Section.

The visits of dignitaries from various parts of the country as well as from abroad took place as in the past. Among the important visitors during the year 1969 were : Mr. Charles de Vriese-Bohm, Director, International Council of Museums, Paris; Mr. Frank A. Taylor, Director-General of I.S.G.E.M., U.S.A.; Dr. Josef Kubo, Director, Muzeum Technické Muzeum, Prague; Prof. Hermann Auer, Director of the Deutsches Museum, Munich; Prof. Dr. (Mrs) Lise Lotte Moeller, Director Museum for Art and Craftsmanship, Hamburg.

B. OBJECTIVES

The main objectives of the museum are :

- i) to portray the history of science and technology.
- ii) to create scientific awareness among the common people, and
- iii) to supplement science education in schools.

C. MUSEUM GALLERIES

The present ten galleries in the museum are as follows:

1. Nuclear Physics	2. Motive Power
3. Popular Science	4. Mining
5. Copper	6. Petroleum
7. Iron & Steel	8. Electricity
9. Television & Electronics	10. Communication

All the galleries have suitable static and working models, animated posters, dioramas and charts. Visitors are allowed to operate many of the exhibits. The museum has also

its own staff of Guide Lecturers who demonstrate the exhibits to the visitors.

D. ACQUISITION OF MODELS & EXHIBITS

Models and exhibits for different galleries and mobile units as shown in pages () have been added to the collection of the museum during the year 1969.

E. EXTENSION ACTIVITIES

i) Mobile Science Museum (MSM)

Conspicuous among various extension activities is the Mobile Science Museum, which started travelling through the country in November, 1965. It extended facilities of the museum to the interior places from where the people cannot readily come to visit the museum in Calcutta. Each unit consists of working exhibits on Popular Science subjects. Exhibitions are held in rural schools for three days at a place. Themes of 4 mobile units, which operated during the year, are : (1) Our Familiar Electricity, (2) Transformation of Energy, (3) Light and Sight and (4) Popular Science. The exhibits of Unit No. I, II and IV are mounted either on a Musocabus or on a trailer bus which serves as the exhibition hall and moves from place to place. Only the exhibits of unit No. III are mounted on flexible tubular display stands which are carried by means of a truck and the exhibition is set up in a school hall.

Details of the units (January to December, 1969) are given below :-

MSM Unit I - Theme : "Our Familiar Electricity"

Housed in trailer (Neptune) drawn by a separate driving unit and has a portable electric generator; No. of exhibits - 24; No. of exhibition during the year - 47; No. of visitors - 43,729; areas covered - districts of Burdwan, Nadia, Bankura, Purulia, Birbhum, Murshidabad and Midnapore; distance travelled - 2574 k.m.

Exhibits give an idea about the development of electricity, its use, common precautions, and working principles of electrical appliances like fan, heater, radio, telephone etc.

MSM UNIT II - Theme : "Transformation of Energy"

Mounted on a Musocabus (Venus) of size 30' x 8'; No. of exhibits - 28; No. of exhibitions during the year - 62; No. of visitors - 66,830; distance travelled - 2539 k.m.; areas covered - Singhbhum, Ranchi, Dhanbad and Hazaribagh in Bihar, Purulia and Bankura in West Bengal.

Exhibits give a basic idea about use of natural sources of energy like sun, wind, water and man made sources of energy like electricity, heat, light, magnetism, steam etc.

MSM Unit III - Theme : "Popular Science" (temporary exhibition)

Exhibits are mounted on flexible tubular display stands which are carried by means of a truck; No. of exhibits - 12; No. of exhibitions during the year - 5; No. of visitors - 21,100; areas covered - 24 Parganas, Midnapore and Calcutta.

MSM Unit IV - Theme : "Light and Sight"

Mounted on trailer bus (Uranus) of size 23' x 8' x 10'

drawn by a separate driving unit and has a portable electric generator, No. of exhibitions held during the year - 46; No. of visitors - 48,530; areas covered - Monghyr and Patna in Bihar, Bankura and Burdwan in West Bengal; distance travelled - 2970 k.m.

The unit shows through 24 working exhibits the function of human eye in comparison with camera, sensitivity of the eye to colours, laws of reflection and refraction, correction of vision by using lenses, microscope, telescope and other optical instruments etc.

ii) Regional Science Museum (RSM)

Regional Science Museums are established in district towns to organise sustained educational programmes in the districts. The first two Regional Science Museums, were set up in the districts of Midnapore and Purulia in January 1968. Later on two more Regional Museums were opened in Bankura and West Dinajpur.

These small Regional Science Museums cater to the needs of the people including students of the regions who cannot readily come to visit this museum in Calcutta. A set of 24/30 models and exhibits in standard cabinets are displayed on detachable tubular stands in each RSM. The exhibits are changed from time to time for the benefit of the people of the regions. They also organise Creative Abilities Centres (CAC) and Science Demonstration Lectures for school students, film shows, Teachers' Training Programme etc. In Brief, the activities of these centres (RSM) are similar to those of the parent museum at Calcutta.

Details of the RSM units stationed in the districts of West Bengal during the year 1969 are :-

MIDNAPORE

RSM at Chandramoni Brahmo Girls' High School, Contai

Theme : 'Mathematics through Fun'; No. of exhibits - 25; distance - 245 k.m. from Calcutta. The unit shows basic theories and formulae of geometry, algebra, trigonometry, permutation, combination etc. in three dimensional working models.

PURULIA

RSM at Manbhum Victoria Institution, Purulia

Theme : 'Work, Power and Energy'; No. of exhibits - 24; distance - 330 k.m. from Calcutta; some of the notable exhibits displayed are : combined potential and Kinetic energy; Water turbine; models on lever; models on wheel and axle; model on Persian wheel; model on Gears etc.

The RSM at Purulia had been set up on permanent basis on November 5, 1969 with a new set of exhibits on the 'Story of Kinematic' and a series of attractive popular exhibits on electronics.

BANKURA

RSM at Bankura Zilla School, Bankura

Theme : 'Story of Kinematics'; No. of exhibits - 24; distance - 242 k.m. from Calcutta; important exhibits are - model on cycloid; model on speed and velocity; model on Newton's first law of motion; model on transfer of momentum; model on Governor and Centrifuge etc.

WEST DINAJPUR

RSM at Coronation High School, Raiganj

Theme : 'The Story of Electricity'; No. of exhibits - 30; Distance - 425 k.m. from Calcutta; important exhibits - sources of electricity; magnetic fields; use of electromagnet; generation of electricity; Ohm's law, principles of electric meters etc.

iii) RSTM opens Regional Museums at Raiganj and Purulia

A new Regional Science Museum was inaugurated in the Coronation High School, Raiganj, West Dinajpur on January 12, 1969. Shri A.N. Saha, I.A.S. District Magistrate of West Dinajpur presided over the function and Shri K. Misra, I.A.S., District Magistrate of Maldah was the Chief Guest. The opening function was attended by a large number of students, teachers, educationists and distinguished persons of West Dinajpur and Maldah, West Bengal. A small Science Museum consisting of 30 attractive working exhibits on 'The Story of Electricity' was placed there to cater to the need of the students and common people of the district. The activities of the Centre which is 425 k.m. away from Calcutta includes school Demonstration Lecture, Creative Abilities Centre for the rural schools, scientific and technical film shows at villages, Competitive Students' Science Seminar, Model Making Competition, Teachers' Training Programme etc.

Permanent set up of Regional Science Museum, Purulia

The Regional Science Museum in Purulia was set up experimentally in January, 1968 in M.V. Institution, a local higher secondary boys' school in the heart of the town. The museum displayed changing sets of exhibits on various subjects. Besides, the museum organised different programmes which included, among other, Mobile Science Museum, Science Demonstration Lecture, Teachers' Training Programme, Creative Abilities Centre, Science Seminars for school students, Film Festival etc. In view of the growing interest of the people of the area in such activities, the RSM at Purulia has been set up on permanent basis on November 5, 1969. The museum has been completely renovated with the addition of a number of interesting and popular exhibits on Kinematics, Space Science, Electronics etc. Some of the important exhibits displayed in the RSM are :- Burglar's Alarm, automatic Water Tap, Magic Room, Continuous Water tap, Electronic Room etc. The exhibition hall covers a floor area of 1000 sq. ft.

20 experts from Science & Technological Museums of U.S.A., U.K., France, Canada, West Germany, Czechoslovakia etc. visited Regional Science Museum on the November 5, 1969. Shri Bibhuti Bhusan Dasgupta, Panchayet Minister, Govt. of West Bengal welcomed them at the RSM.

iv) Science Demonstration Lecture (SDL) Based on School Curricula

Science Demonstration Lecture for school students were arranged with the help of working exhibits both in museum auditorium and in rural schools outside Calcutta on the subjects as follows :-

- 1) Principles of electric Generators
- 2) Light & our Eyes
- 3) Properties of Liquid
- 4) Acids, Bases and Salts
- 5) Heat to Heat Engine
- 6) Laws of Motion

The lectures were followed by film shows on the respective subjects. The following are the statistic of the students and teachers attended such lectures during the year 1969 :-

Place of Lecture	No. of lectures delivered	No. of students and teachers
Museum auditirium	13	512
Outdoor (outside Calcutta and surroundings)	21	1053
Purulia District	25	2320
Bankura "	32	3011
Midnapore "	44	4981
Total:	135	11877

v) Creative Abilities Centre (CAC)

This is the name given to the science hobby centres set up by the museum in different places. The first CAC was set up in the museum premises in 1966 where generally school students work in spare time on projects of varied nature viz. physics, astronomy, chemistry, biology, electronics etc. During the year 1969 about 40 students were admitted in the museum CAC. This year 6 students from different schools worked here for the National Science Talent Search examination.

Besides the CAC run by the museum in its premises, there are about 25 Creative Abilities Centres in the districts of 24-Parganas, Hooghly, Midnapore, West Dinajpur, Bankura and Purulia. They get technical advice and guidance either directly from this museum or from our Regional Science Museums in the districts.

vi) Teachers' Training Programme

The Teachers' Training Programme (TTP) is one of the important extension activities of this museum. The programme started in the middle of the year 1968. The main idea of this programme is to provide the science teachers of selected High and Higher Secondary schools in different districts in and outside Calcutta, with a short-term (8 days) training facilities in suitable places, generally sub-divisional towns, and train them in uses of some basic and important tools, instruments etc. and also in fabrication of a number of scientific models and educational kits. After training, the teachers are expected to open Science Hobby Centres, styled as 'Creative Abilities Centre' in their own schools and guide the participating students in their hobby activities during their leisure hours.

The following training programmes were held during the year 1969 :-

Place of training	Training period	No. of teacher trainees	No. of schools participated
1.	2.	3.	4.
Birla Industrial & Technological Museum, Calcutta	December 23 to January 2, 1969	7	4
Bankura Zilla School,	Jan 10 to 18, 1969	15	12

1.	2.	3.	4.
Burdwan Raj Collegiate School, Burdwan	Feb 11 to 19, 1969	10	6
Bonimadhab Institution Suri, Birbhum	Feb 21 to March 1, 1969	8	5
Central Mining Research Station, Dhanbad, Bihar	Aug 4 to 12, 1969	10	6
Rajasthan Vidyapith, Purulia	Nov 3 to 10, 1969	5	3
	Total :	55	36

vii) BITEM Students' Science Seminar - 1969

A Students' Science Seminar on the subjects : 'Journey to the Moon' and 'Exploration of space - how it helps mankind' was organised by the Birla Industrial & Technological Museum on September 2, 1969.

In all 48 students from the schools in Calcutta, Midnapore Purulia, Bankura, Birbhum and Burdwan participated in the said science seminar held with a view to popularise science amongst students. Many educationists and head of schools also attended.

Shri Mohit Kumar Roy of Ram Krishna Mission Vidyapith, Purulia stood first in the seminar. Prizes in the form of books were distributed to the winners and certificates to all participants by Prof. Durgadas Banerjee, Principal, B.E. College, Sibpur, after the seminar.

viii) District Science Seminars

To promote science education in rural areas, BITEM organised competitive students' Science Seminars in three districts of West Bengal on the subjects : 'Journey to the Moon' and 'Exploration of Space-how it helps mankind' as per details below :-

a) Regional Science Museum (RSM) in Contai Chandramoni Brahma Girls' High School, Contai Dist Midnapore on August 14, 1969. 21 students from 20 schools of the district of Midnapore participated in the seminar. Shri M. Gupta, I.A.S., Sub-Divisional Officer, Contai presided over the function and distributed prizes to the winners.

b) Burdwan Raj Collegiate School, Burdwan on August 14, 1969. 13 students from 13 schools of the district of Burdwan participated in the seminar. Dr. P.K. Sengupta, Physics Deptt., Burdwan University, distributed the prizes to the winners.

c) Regional Science Museum in M.V. Institution, Purulia on August 18, 1969. 14 students from 13 schools of the Purulia district participated in the seminar. Many educationists and heads of schools also attended the seminar.

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F. Miscellaneous

i) Technical Assistance rendered to other organisations

1. Fabrication of models for Visvesvaraya Industrial & Technological Museums, Bangalore.
2. Motilal Nehru Children's Museum, Lucknow was assisted in setting up a small museum gallery on Popular Science for the school children.

ii) Film Shows

The necessity of adopting audio-visual methods in imparting knowledge to the people is well recognised. Popular Scientific and Technical film shows are held in the museum 8 times a week, 4 of them being reserved for school students. These are well attended. Besides the above regular shows some special film shows were arranged in the museum with the films borrowed from United States Information Services, The British Information Services, different Consulates, Film Division, Govt. of India etc. In 1969, 452 film shows were held in the museum auditorium and 181 shows were held in rural areas through the mobile units and regional museum

iii) Sky Observation Programme

Special Night Sky Observation Programmes were arranged in the museum premises for Amateur Astronomers' Association, Calcutta at 6.30 p.m. on February 1, 1969 and April 3, 1969. About fifty members of the Association attended the programmes.

1969

G. Special Occasions

i) 10th Anniversary Celebrations of BITM

The 10th anniversary of the BITM was celebrated during May 2 to 15, 1969. The programme included Students' Science Fair, 10 Popular Lectures on different branches of science by eminent scientists, special exhibition on 'Moon', Film shows, Television, Tape-recording etc.

a) Science Fair in BITM

Inauguration

To develop scientific aptitude among students and to encourage them to prepare models and exhibits on scientific subjects, the BITM, Calcutta organised a 'Science Fair' in its premises from May 2 to 15, 1969. More than 400 exhibits on science, engineering and technology, made by 500 school students were displayed in the fair. The students came from different parts of West Bengal and Bihar including West Dinajpur, Purulia, Bhagalpur etc. In all 59 schools and three hobby centres, out of which 42 coming from various districts outside Calcutta participated in the fair. More than 50 model makers coming from the districts stayed in Calcutta for two weeks and demonstrated their models to 20,000 visitors, mostly students.

Dr. (Mrs) Grace Morley, the UNESCO Expert on Museums, inaugurated the fair. Dr. Morley in course of her address praised the students and their models and observed that she was very much impressed by the part played by the museum for the popularisation of science among the people in general and the students in particular. Prof. Priyada Ranjan Ray, the

veteran scientist, presided over the function. Shri A. Bose, Chief Curator, Industrial & Technological Museums of CSIR also addressed the gathering and focussed the manifold activities of the museum during last ten years.

Prize distribution ceremony

Shri Jyoti Bhushan Bhattacharya, Information and Public Relations Minister, Govt. of West Bengal distributed prizes to the successful participants on the last day of the fair. While awarding prizes Shri Bhattacharya stressed on the need of the science education in rural areas of the country. Dr. J.N. Mukherjee, the eminent scientist, presided over the function and expressed satisfaction that the Birla Museum coming up to the real needs of the country in popularising science.

Shri Kalyanbrata Sikdar, a student of Amarkanan Beshbandhu High School of the district of Bankura won the first prize in the science fair. Out of the three second prizes two went to Calcutta students and one to the Bankura district. In general the district of Bankura fared very well in the competition bagging seven prizes in total and won the coveted 'best district prize - 'Acharya J.C. Bose Challenge Trophy', an attractive silver plated model of a flying rocket.

Some of the prize winning exhibits displayed in the fair were : Electric pump, Auto weighing machine, Computer, Human Body dissected, Blast Furnace, Layout model of Farakka Barrage, Auto Coffee Seller, Oscilloscope, How Plant lives, Magic lamp, Morse Receiver, Auto - Century calender, Record Player, Incubator, Submarine, Micro-project, model of Railway Engine etc.

While welcoming the guests Shri S.K. Ghose, Senior Curator of the Birla Museum stated that this was the first time in the country that so many rural schools had participated in a science fair.

Special exhibition on 'Moon'

Along with the Science fair there was an exhibition on the moon organised jointly by the Museum and Amateur Astronomers Association in collaboration with the U.S.I.S. and Soviet Information Centre.

Popular lectures

Ten popular lectures were arranged during the celebration of the museum as follows :

<u>Speaker</u>	<u>Subject</u>	<u>Date and Time</u>
Dr. B. Mukherji, former Director, Chittaranjan National Cancer Research Centre, Calcutta & C.D.R.I., Lucknow.	Structural Unit of Life and the Mystery of Cancer.	Saturday, May 3, 1969 : 2.00 p.m.
Dr. R.K. Mandal, Bose Institute, Calcutta.	The Code of Life and Khorana.	Tuesday, May 6, 1969 : 6.00 p.m.
Shri R.L. Brahmachary, Indian Statistical Institute, Calcutta.	Embryology from Aristotle's Philosophy to Khorana's Molecules.	Wednesday, May 7, 1969 : 6.00 p.m.
Prof. Shubhotosh Mukherjee, Presidency College, Calcutta.	You and your inner being.	Thursday, May 8, 1969 : 5.00 p.m.

Speaker

Subject

Date and Time

Dr. M.K. Das Gupta,
Institute of Radio
Physics & Electronics,
Calcutta.

Space research

Friday, May 9, 1969
2.00 p.m.

Shri Kamalesh Ray,
C.S.I.R., New Delhi

a) On the Making
of Telescope

b) Probing of Space
through Telescope

Saturday, May 10,
1969 : 2.00 p.m.
Sunday, May 11,
1969 : 6.00 p.m.

Shri Sankar
Chakraborty, President,
Amateur Astronomers'
Association, Calcutta.

a) Journey to the
Moon

b) Conquest of
Space

Tuesday, May 13,
1969 at 6.00 p.m.
Wednesday, May 14,
at 1.00 p.m.

Prof. Dr. T.C. Roy,
Jadavpur University,
Calcutta.

Physics in space
science.

Wednesday, May 14,
1969 : 6.00 p.m.

ii) Meeting of the International Committee for Museums of
Science and Technology

The International Committee for Museums of Science and Technology of the International Council of Museums, Paris (ICOM) held meetings in Delhi, Calcutta and Bangalore between November 2 and 16, 1969. 20 experts in Science & Technological Museums from U.S.A., U.K., France, Canada, West Germany, Czechoslovakia, Sweden, U.A.R., Uruguay, Ghana, India, Pakistan etc. attended the meeting in Calcutta. They were here to study the progress made so far in the field of science museums and to find ways of accelerating the growth of such museums and make them as educative as possible. Some of the prominent participants were : Mr. Hugues de Varine Bohan, Director, ICOM; Mr. William T.C'Dea, Chairman, ICOM Sub-Committee; Dr. Frank A. Taylor, Director-General of U.S. National Museums; Dr. (Mrs.) Grace Morley, Permanent Expert, ICOM Regional Agency in Asia; Prof. Herman Auer, Director, Deutsches Museum, Munich etc.

A reception meeting was arranged in the Birla Industrial & Technological Museum, Calcutta on November 4, 1969 at 10.00 a.m. to welcome the participants and observers of the International Committee for Museums of Science & Technology. Mr. A. Bose, Chief Curator, Industrial & Technological Museums, C.S.I.R., and Vice-Chairman, ICOM Sub-Committee welcomed the members present and traced the manifold activities of the museum since its inception in 1959. Mr. William T.O'Dea, Chairman, ICOM Sub-Committee addressed the meeting and highly appreciated the progress achieved by the Science Museum authorities in India. Mr. S.K. Ghose, Senior Curator, Birla Industrial & Technological Museum, briefed them about extension services of the museum and their trip in and outside Calcutta. After the meeting, they visited the galleries of the museum, its workshops, proposed site for Science Exhibits Laboratory in the museum premises. Besides, they visited Indian Museum, Birla Planetarium etc. in Calcutta.

Visit to the sites of the extension services of the
Birla Industrial & Technological Museum

On November 5, 1969, the participants and observers of the ICMS&T were taken to an interior district of West Bengal, by a chartered plane and bus, to make them acquainted with some of the following educational activities regularly organised by the Museum beyond its four walls :-

1. Mobile Science Museum (MSM) - one of the Mobile Science Exhibition units on 'Our Familiar Electricity' at Balarampur, about 365 kms. from Calcutta. It consists of 24 working exhibits showing the principles of electricity and its use in everyday life. They also observed there a Science Demonstration Lecture on 'Properties of Liquid' organised for school students. The demonstration set has been specially developed by the museum with the help of working models and exhibits.
2. Regional Science Museum (RSM) - and its allied educational activities at Purulia, about 330 kms. from Calcutta. It is one of the Regional Science Museums established in district towns to organise sustained educational programmes in the districts. They were taken round the Museum which has been completely renovated and set up permanently with the addition of a number of interesting and popular models. The set of exhibits, static and working, includes : 42 models on Kinematics, space science and popular exhibits on electronics.

Mr. Bihuti Bhushan Das Gupta, Minister, Government of West Bengal, welcomed them at Purulia.

III) Science Fair at Krishnagar, Dist. Nadia

A week-long science fair in commemoration of the birth centenary celebration of late Jagadananda Roy, a pioneer science writer in Bengali, was organised by the Birla Industrial & Technological Museum at Krishnagar Public Library, Krishnagar. Dr. Sourendra Mohan Surkar, Director, Bose Institute, Calcutta, inaugurated the fair. The programme included photographic exhibition on 'Landing on Moon', film shows on space science, sky observation through telescope, mobile science exhibition and a popular lecture on Landing on Moon.

About a lakh people visited the fair from December 25 to 31, 1969.

H. Attendance

(A) Indoor

Visitors to the museum - 2,12,880 including
494 organised groups covering
18,539 students.

(B) Outdoor

(a) Mobile Science Museums	-	1,80,189
(b) Regional Science Museums	-	52,000
(c) Science Demonstration Lectures		11,365
(d) Science Fair at Krishnagar Public Library	-	1,00,000
(e) Science Fair at BITM premises	-	20,000
(f) Teachers' Training Programme		55
(g) Occasional film shows in rural areas		1391
		<hr/>
		3,65,000

I. Honours and awards

Birla Industrial & Technological Museum, Calcutta participated in the Model Engineers' Exhibition held at the Academy of Fine Arts, Calcutta, from February 19 to 23, 1969 and received awards as follows :

a) A diorama showing life and transport used in Arctic Region (size : length 5'-0", breadth 2'-6" and height 3'-6") was adjudged the best in the General Section. BITM has been awarded a trophy.

b) A model of Stephenson's Locomotion Locomotive of the year 1825 (size : length 2'-7", breadth 5 $\frac{1}{2}$ " and height 1'-0") has been awarded a special certificate of merit in the Engineering Section.

J. Distinguished Visitors

	<u>Date of visit</u>
1. Dr. Roma Chaudhuri Vice-Chancellor, Rabindra Bharati University, Calcutta.	January 18, 1969
2. Shri J.C. Sengupta, Secretary, Education Deptt. Govt. of West Bengal.	January 18, 1969
3. 26 students and artists from Jammu and Kashmir, organised by the Union Ministry of Information & Broadcasting.	January 23, 1969
4. Prof.Dr.(Mrs.) Lise Lotte Moeller, Director, Museum for Art and Craftsmanship Hamburg, Federal Republic of Germany	February 24, 1969
5. Prof. Priyada Ranjan Ray, Scientist.	May 2, 1969
6. Dr. B.Mukherjee, Former Director, Chittaranjan National Cancer Research Centre, Calcutta and Central Drug Research Institute, Lucknow.	May 3, 1969
7. Shri Jyoti Bhusan Bhattacharya, Information and Public Relations Minister, Govt. of West Bengal.	May 15, 1969
8. Dr. J.N. Mukherjee, Scientist.	May 15, 1969
9. Dr. K.L. Rao, Union Minister of Irrigation & Power	June 29, 1969
10. Prof. Durgadas Banerjee, Principal, B.E. College, Sibpur.	September 2, 1969
11. Dr. Shanti Patel, Bombay Municipal Corporation	October 4, 1969
12. Dr.(Mrs.) Grace Morley, Permanent Expert, ICOM Regional Agency in Asia, New Delhi.	November 4, 1969.

14. Mr. William T. O'Dea,
Senior Scientific Consultant,
Ontario Science Centre.

November 4, 1969.

15. Dr. Josef Kuba,
Director,
Narodni Technicke Museum,
PRAGUE, Czechoslovakia.

"

16. Mrs. Lesley A. West,
Science Museum, London.

"

17. Mr. Hugues de Varine-Bohan,
Director,
International Council of Museums
PARIS

"

18. Prof. Hermann Auer,
Director of the Deutsches Museum,
MUNICH

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19. Mr. H.F. Guido,

Director,

Planetario Municipal, Montevideo, Uruguay,

S. America

"

20. Dr. Mahmoud Messallam Hasan,
Director, Museum of Science &
Technology,
CAIRO, U.A.R.

"

21. Dr. Frank A. Taylor,
Director-General of Museums,
U.S.A.

"

22. Mr. W. Winton,
Keeper, Science Museum,
London.

"

23. Mr. Sigvard Strandh,
Director,
Tekniska Museet,
STOCKHOLM, Sweden

"

24. Mr. Ariful Haque,
Dacca Museum,
East Pakistan

"

25. Mr. M. Akmal,
Director,
Science Museum,
Lahore, West Pakistan

"

26. Dr. Bernard Tan
C/o. Principal Assistant
Secretary,
Ministry of Science & Technology,
Singapore

"

K. - Staff

The present strength of staff is given below:

	<u>sanctioned</u>	<u>Filled up</u>
1. Officers (Aux. Technical) -	8	7
2. Officers (Non-Technical) -	3	3
3. Class-III (Technical) -	100	91
4. Class-III (Non-Technical) -	35	33
5. Class-IV (Technical) -	36	34
6. Class-IV (Non-Technical)	42	42
Total	224	210

L. General Information about the museum LIBRARY:

The stock of the library comprises books on science & technology. In view of the dearth of good technical public libraries in the vicinity, it was considered fit to open the stock to outsiders so that maximum benefit could be derived from the stock. So, the library was opened to the public on July 6, 1966 and so far 427 members mostly students have enlisted as members of the library and have been using it as a reading room to their advantage.

The stock of books, periodicals, films, etc. in the Library are as under :-

Books - 4268

Important
Journals received - a (by subscription - 30
b (by membership - 6
c (complimentary important only) - 57

Technical films - 163

Pamphlet - 1865

Bound Periodicals - 321

Publications issued
during the year - 2748

No. of outside readers enlisted during the year - 207

Museum hours

Open from 10.00 to 5.00 p.m. on all days except Mondays.

Admission - Admission free except Sundays and holidays

Television shows:- Twice daily.

Publications : A) Illustrated folders on Mobile Science
Exhibition units are :-

- 1) Our Familiar Electricity (MSM Unit I) - Bengali and English
- 2) Light and Sight (MSM Unit 4) - Bengali and English

B) Museum Programme of Events in Bengali/English :-

- a) January - March, 1969
- b) April - June, 1969
- c) July - September, 1969
- d) October - December, 1969.

Prize Distribution Ceremony :

On Saturday, January 18, 1969 Shri J.C. Sengupta, Secretary, Deptt. of Education, Govt. of West Bengal, presided over the prize giving ceremony in connection with the 'Competitive Students Science seminar' held in the Birla Industrial & Technological Museum, Calcutta-19 in September, 1968. Dr. Roma Bhattacharya, Vice-Chancellor, Rabindra Bharati University was the Chief Guest. The said seminar on the following subjects was organised with a view to popularise science among students :

1. Revolution in Agriculture
2. Transplantation on Human Body
3. Generation of Electric Power

In all 32 students from the reputed schools of Calcutta, Bankura, Midnapore and Purulia participated in the seminar.

Deputation :

Shri R.C. Chandra, Exhibition Officer, BITM, was deputed to visit U.K. to attend a conference of Museum Association, London and a Symposium on Museum Training organised by Leicester University, London. During his deputation he visited important museums in U.K. France and Germany and Italy to study display techniques.

MODELS AND EXHIBITS FABRICATED IN THE MUSEUM WORKSHOP FOR THE MUSEUM GALLERIES AND TELEVISION ACTIVITIES.

(For Museum galleries)

1. Model of Stephenson Locomotive - 1825
2. Model of Benz Carriage - 1885
3. Model of an eye
4. Exhibit to compare a camera with an eye
5. Exhibit to show the function of brain with half hidden letters.
6. Exhibit on depth of vision
7. Exhibit on use of spectacles
8. Exhibit on subtraction of colour
9. Exhibit on cycloid
10. Exhibit on action and reaction
11. Exhibit on oscillations of a pendulum
12. Exhibit on complementary colours
13. Exhibit on addition of colours
14. Exhibit to show that light is invisible
15. Animated diorama of Aquarium
16. Exhibit on Newton's Disc
17. Exhibit on total internal reflection
18. Exhibit on 'sound requires a medium'
19. Exhibit to show the remote control operations of an anti-aircraft gun.
20. Exhibit on transmission of sound through light
21. Exhibits on : (a) Musical sound, (b) Savart wheel and (c) Musical disc.

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Scientific Sub-Committee

1. Prof. H.C. Guha
Vice-Chancellor,
Jadavpur University. Chairman
2. Prof. G.C. Sen,
Jadavpur University Member
3. Director,
Indian Museum,
Calcutta
(Shri A.K. Bhattacharyya) "
4. Curator,
Birla Planetarium, Calcutta
(Shri R. Subrahmanian) "
5. Director of Public
Instruction,
West Bengal.
(Dr. R.L. Sengupta) "
6. Prof. D. Banerjee,
Principal,
B.E. College, Shibpur "
7. Mrs. S. Chowdhury,
Principal,
Lady Brabourne College,
Calcutta. "
8. Dr. K.K. Ganguli,
Head of the Deptt. of Museology,
Calcutta University "
9. Chief Curator,
Industrial & Technological Museums,
C/o. Visvesvaraya Industrial &
Technological Museum,
Bangalore-1. (Shri A. Bosc) "
10. Senior Curator,
Birla Industrial & Technological
Museum, Calcutta-19.
(Shri S.K. Ghose) "

Members of Building & Finance Sub-Committee

1. Shri M.P. Birla,
Chairman, Executive Council.
2. Prof. G.C. Sen,
Jadavpur University, Calcutta-32.
3. The Superintending Engineer,
C.P.W.D. Central Circle II, Calcutta.
4. Secretary,
Council of Scientific & Industrial Research.
5. F.A. to CSIR, New Delhi.

6. Md. Ismail,
Chief Engineer,
Calcutta Improvement Trust,
Calcutta.
7. Shri A. Bose,
Chief Curator,
Industrial & Technological Museums,
C/o. Visvesvaraya Industrial &
Technological Museum,
Bangalore.
8. Shri S.K. Ghose,
Senior Curator,
Birla Industrial & Technological Museum,
Calcutta-19.

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